

**REMARKS**

Reconsideration of the above-identified patent application, as amended herein, is respectfully requested. Claims 1-20 have been canceled, and new claims 21-28 have been presented for examination.

In the Office Action dated July 11, 2003, the Examiner rejected then-pending claims 12, 19, and 20 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particular point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner noted certain informalities in then-pending claims 12, 19, and 20.

By means of the present Amendment, claims 12, 19, and 20 have been canceled. New claims 21, 27, and 28 substantially correspond to claims 12, 19, and 20. Claims 21, 27, and 28 have been carefully drafted so as to avoid the informalities in claims 12, 19, and 20 noted by the Examiner.

Accordingly, it is believed that all of the claims now in the application comply with the requirements of 35 U.S.C. 112, second paragraph, and withdrawal of this ground for rejection is respectfully requested.

In the Office Action dated July 11, 2003, the Examiner also rejected then-pending claims 12-16 and 18 under 35 U.S.C. 102(b) as being fully anticipated by EP 0149247 (hereinafter EP '247). According to the Examiner, EP '247 discloses a rolling stand with laterally supporting rolls that are retracted in order to facilitate replacement of the work rolls, citing page 10, line 21, through page 11, line 5, of that reference. The Examiner

further rejected claim 17 under 35 U.S.C. 103(a) as being unpatentable under EP '247. The Examiner further rejected claims 19 and 20 under 35 U.S.C. 103(a) as being unpatentable over EP '247, either alone or in combination with U.S. 3,535,204 (Truxa). However, for the reasons set forth below, it is believed that claims 21-28 are neither anticipated nor rendered unpatentable by the prior art of record.

In particular, claim 21 now makes clear that in the roll stand according to the invention, each back-up roll is borne by a support beam. This feature is disclosed on page 7, fourth paragraph, of the specification and is shown in the drawings.

In accordance with page 8, last paragraph, and the corresponding figures, claim 21 states that along the back-up roll several force generation devices are arranged.

Further, claim 21 specifies that each of the force generation devices is individually adjustable such that via the support beams, a certain whipping of the respective back-up rolls or work rolls is adjusted. In the specification, this feature is disclosed on page 4, last paragraph, and in conjunction with page 10, last paragraph. The term "whipping" is understood by those skilled in the art of rolling mill techniques to denote bending of the work rolls. Whipping of the working rolls is performed when rolling a steel strip in order to adapt the roll gap of the roll stand to changes in the rolling forces or the rolled steel materials so that a uniform thickness is achieved.

Also, claim 21 now makes clear that the chock can be withdrawn from the roll stand in the direction of the longitudinal axis of said chock, which feature is disclosed on page 7, third paragraph, of the specification.

Finally, the feature of prior claim 13, that the back-up rolls can be positioned by means of the force generation devices, is now included in claim 21. Accordingly, the new set of claims does not include a claim which corresponds to prior claim 13.

Dependent claims 22 through 28 essentially correspond to prior claims 14 through 20 except for slight changes in the wording and their adapted numbering and dependencies.

In the Office Action, the Examiner rejected then-pending claim 12 as being fully anticipated by EP '247. According to claim 21, however, the forces necessary for supporting the work rolls are delivered by several force generation devices, which act directly upon a support beam. The forces are transferred to the work roll via the back-up roll being carried by the respective support beam.

Further, according to claim 21, several of such force generation devices are arranged respectively along the support beams and each of these force generation devices can be adjusted individually. Therefore, the user of the roll stand is able to adjust the forces generated by the force generation devices in such a way that a precisely determined whipping of the respective back-up roll and consequently an equally precisely determined support of the work roll is achieved. In this connection, the term "several" denotes that at least two and preferably more than three force generation devices as shown in the Figures are arranged distributed along the respective back-up roll according to the invention.

The matter described in EP '247 does not include this possibility. According to the second embodiment of EP '247 the back-up rolls 49, 96 are respectively borne by a support beam 54. However, the actuating cylinders 85 coupled to the support beam 54 only serve to move the support beam into operating position. As soon as this operating position is achieved, the force pressing the back-up rolls 49, 96 against the work roll is adjusted via wedges 84. These wedges are guided in a housing 42 by a spindle drive 90 and act on the lateral ends of the support beam 54 (EP '247: page 17, line 3 et seq., Fig. 6). Between the wedges 84 and the support beam 54 spacer blocks are arranged. These spacer blocks 83 can be withdrawn upwards by hydraulic cylinders 87 in order to clear the space between the wedges and the respective support beam. Thus, withdrawal of the support beams from the operating position into the idle position is to be simplified according to EP '247.

Therefore, according to the prior art disclosed in EP '247 a hydraulic actuating cylinder is assigned to each support beam. However, these actuating devices only serve to move the respective beam from an idle position (EP '247: Fig. 7) to an operating position (EP '247: Fig. 5) in the case of a change of work rolls. The mentioned actuating cylinders are consequently not force generation devices in the sense of the claimed invention, via which a support force is applied to the respective work roll. Rather, the actuating cylinders according to EP '247 are conventional actuating devices, which merely move the respective beam and the back-up roll borne by the beam.

In addition, according to the roll stand known from EP '247 in each case only two actuating devices are present, which furthermore only act on the lateral corner areas of the support beam. Even if these actuating devices would apply a support force during the rolling process, they could consequently not generate a targeted deformation of the beam and the back up roll borne by the beam, adapted to the complex deformations of the work roll. In particular, the wedges provided according to the devices described in EP '247 for generating the support force cannot be adjusted quickly. This, however, would be required in order to achieve a fast and precise adaption of the load of the support beam and, respectively, of the rolls loaded by said beam to a changed operating situation.

The idea of the present invention to provide force generation devices arranged along a support beam, which force generation devices actively cause a deformation during rolling of the support beam and the back-up roll carried by same beam, is therefore not disclosed or suggested in the device disclosed in EP '247. Also not disclosed or suggested in EP '247 is the idea of the invention, that instead of two actuating cylinders arranged at the ends of the support beam according to EP '247, to arrange several force generation devices along the respective support beam, which in operation actively apply certain support forces to the respective support beam which provide an adjustable whipping of the respective back up rolls or work rolls via the support beam.

Therefore, according to the roll stand known from EP '247, generation of the support force is achieved with additional wedge elements, remaining fixed during

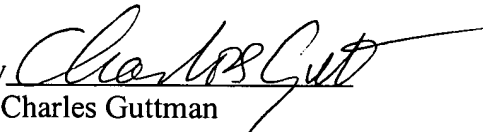
operation, which elements are not suited for a dynamic adaption of the support force to a quickly changing operating situation. Consequently, generation of the support force according to EP '247 occurs in a fundamentally different manner from the present invention.

It is therefore believed that the invention of claim 21 is not only new compared to the prior art of record, but also that in order to reach the invention of claim 21, an unobvious inventive step is also necessary. As all other claims in the application depend from claim 21, it is believed that they too are new and unobvious from the prior art of record.

In view of the foregoing, it is believed that the present application is now in condition for allowance and a favorable action on the merits is respectfully requested.

Respectfully submitted,

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